```
=> s "reversible addition fragmentation"
        161215 "REVERSIBLE"
             7 "REVERSIBLES"
        161220 "REVERSIBLE"
                 ("REVERSIBLE" OR "REVERSIBLES")
        193634 "ADDITION"
         16969 "ADDITIONS"
        207406 "ADDITION"
                 ("ADDITION" OR "ADDITIONS")
         79583 "FRAGMENTATION"
          3292 "FRAGMENTATIONS"
         80936 "FRAGMENTATION"
                 ("FRAGMENTATION" OR "FRAGMENTATIONS")
L1         416 "REVERSIBLE ADDITION FRAGMENTATION"
                 ("REVERSIBLE"(W)"ADDITION"(W)"FRAGMENTATION")

=> s l1 and support?
        933879 SUPPORT?
L2          10 L1 AND SUPPORT?
```

=> d l2 1-10 ibib abs

L2 ANSWER 1 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2007:1277708 CAPLUS
DOCUMENT NUMBER: 148:100974
TITLE: Reversible Addition-Fragmentation Chain Transfer Graft Polymerization Mediated by Fumed Silica Supported Chain Transfer Agents
AUTHOR(S): Zhao, Youliang; Perrier, Sebastien
CORPORATE SOURCE: Department of Colour and Polymer Chemistry, University of Leeds, LS2 9JT, UK
SOURCE: Macromolecules (Washington, DC, United States) (2007), 40(25), 9116-9124
CODEN: MAMOBX; ISSN: 0024-9297
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB In this study, the Z supported reversible addition-fragmentation chain transfer (RAFT) graft polymerization to prepare silica-polymer hybrids was investigated. Two chain transfer agents (CTAs), S-benzyl S'-trimethoxysilylpropyltrithiocarbonate and S-methoxycarbonylphenylmethyl S'-trimethoxysilylpropyltrithiocarbonate, were synthesized and covalently attached to the surface of fumed silica. The resultant silica supported CTAs were used to mediate RAFT polymerization of vinyl monomers such as Me acrylate, Bu acrylate, N,N-dimethylacrylamide, N-isopropylacrylamide, Me methacrylate, and styrene in the presence of a free CTA to synthesize polymer grafted silica particles. Effects of CTA loadings on solid supports, types of free CTAs, and reaction media on graft polymerization were investigated in detail. Under optimal conditions such as using 2-(2-cyanopropyl)dithiobenzoate as a free CTA and controlling the polymerization at a low conversion (typically less than 40%), well-defined polymeric chains with polydispersity indexes less than 1.2 and chain lengths similar to those of free polymers could be successfully grafted onto the surface of fumed silica, and relatively high grafting ratios could be achieved, as is evident from GPC, FT-IR, and TGA analyses. As compared with polymerization in toluene, RAFT graft polymerization of Me acrylate in methanol could afford longer grafted chain lengths and significantly increased grafting efficiency at identical conditions, suggesting the potential effects of reaction media on graft polymerization
REFERENCE COUNT: 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 2 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2007:482672 CAPLUS
DOCUMENT NUMBER: 147:95931
TITLE: Intermediate Radical Termination in Reversible Addition-Fragmentation Chain Transfer-Mediated Polymerization: Identification of Termination Products
AUTHOR(S): Geelen, Patricia; Klumperman, Bert
CORPORATE SOURCE: Dutch Polymer Institute (DPI), Eindhoven, 5600 AX, Neth.
SOURCE: Macromolecules (Washington, DC, United States) (2007), 40(11), 3914-3920
CODEN: MAMOBX; ISSN: 0024-9297
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Rate retardation in reversible addition-fragmentation chain transfer (RAFT)-mediated polymns. is the topic of an ongoing debate. One of the main explanations for this rate retardation is termination of the intermediate radical. The use of a RAFT agent with a UV label in the leaving group acts as a means to identify products of intermediate radical termination (IRT). In the anal. of the polymeric samples with size exclusion chromatog. (SEC), two different UV absorbance traces were compared (i.e., the UV absorbance of the label used and that of the thiocarbonyl thio moiety of the RAFT agent). Deviations in the ratio of the C:S of the RAFT moiety to the UV label indicate that IRT products could be formed. Matrix-assisted laser desorption ionization time-of-flight mass spectrometry was used to identify these IRT products formed during a "normal" RAFT-mediated polymerization (not using forced conditions). These exptl. findings support the postulated IRT model and therefore help to elucidate the fate of the intermediate radical during a RAFT mediated polymerization

REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 3 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2007:477624 CAPLUS

DOCUMENT NUMBER: 147:95953

TITLE: Controlled/Living Ring-Closing Cyclopolymerization of Diallyldimethylammonium Chloride via the Reversible Addition Fragmentation Chain Transfer Process

AUTHOR(S): Assem, Yasser; Chaffey-Millar, Hugh; Barner-Kowollik, Christopher; Wegner, Gerhard; Agarwal, Seema

CORPORATE SOURCE: Fachbereich Chemie, Philipps-Universitaet Marburg, Marburg, D-35032, Germany

SOURCE: Macromolecules (Washington, DC, United States) (2007), 40(11), 3907-3913
CODEN: MAMOBX; ISSN: 0024-9297

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB For the first time, controlled/living free-radical polymerization of a cyclopolymg. monomer, that is diallyldimethylammonium chloride (DADMAC), was achieved via reversible addition fragmentation chain transfer (RAFT) chemical in the presence of both trithiocarbonate and xanthate RAFT/macromol. design via the interchange of xanthate (MADIX) agents in aqueous solution at 60, 80, and 90 °C. The structural characterization of the polymers was achieved via NMR spectrometry, indicating that during the RAFT polymerization of DADMAC, identical to its equivalent conventional free radical polymerization, five-membered rings are formed almost exclusively. In the case of the trithiocarbonate agent, there was excellent agreement between the theor. and exptl. number average mol. wts., Mn, with narrow polydispersities (approaching polydispersity index (PDI) ≈ 1.10) being observed (2100 g mol-1 < Mn < 51 000 g mol-1). Chain extension was carried out by sequential batchwise addition of the monomer, confirming the living character of the system. However, the increase in Mn with respect to conversion was not linear in the case of the xanthate agent, yet the PDIs were as low as 1.12, indicating that control was achieved. The inclusion of NaCl into the reaction mixture reduces of the rate of polymerization for both RAFT agents.

Such an observation supports the hypothesis that electrostatic repulsion is crucial to fragmentation of the primary propagating radicals from the adduct RAFT radical; i.e., it appears that an electrostatic interaction is affecting the (chemical) RAFT equilibrium

REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 4 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2007:3438 CAPLUS
DOCUMENT NUMBER: 146:229693
TITLE: Silica-immobilized cumyl dithiobenzoate as mediating agent in reversible addition fragmentation chain transfer (RAFT) polymerization
AUTHOR(S): Nguyen, Duc Hung; Vana, Philipp
CORPORATE SOURCE: Institut fuer Physikalische Chemie, Georg-August-Universitaet Goettingen, Goettingen, 37077, Germany
SOURCE: Polymers for Advanced Technologies (2006), 17(9-10), 625-633
CODEN: PADTE5; ISSN: 1042-7147
PUBLISHER: John Wiley & Sons Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Reversible addition fragmentation chain transfer (RAFT) polymns. of styrene and Me methacrylate were performed in bulk at 60°C, using cumyl dithiobenzoate as the mediating RAFT agent that has been immobilized via the stabilizing Z-group to nanometer-sized fumed silica particles. Increasing mol. wts. with monomer conversion and absence of conventional polymerization activity in the interstitial solution phase were observed when the overall concentration of silica particles was carefully balanced with their resp. cumyl dithiobenzoate loading. After completion of the polymerization, potentially sulfur-free polymers with controlled mol. wts. were obtained, initially via collecting the terminated polymeric material from the interstitial solution phase and, secondly, via cleavage of the surface-confined polymer by a single addition fragmentation chain transfer step, which provides a pathway for recovery of the solid-supported RAFT agent.
REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 5 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:30211 CAPLUS
DOCUMENT NUMBER: 144:274689
TITLE: Reversible addition-fragmentation chain transfer graft copolymerization of styrene and m-isopropenyl-α,α'-dimethylbenzyl isocyanate from polypropylene lanterns: Solid phases for scavenging applications
AUTHOR(S): Barner, Leonie; Perera, Senake; Sandanayake, Sam; Davis, Thomas P.
CORPORATE SOURCE: Centre for Advanced Macromolecular Design, School of Chemical Engineering and Industrial Chemistry, University of New South Wales, Sydney, NSW, 2052, Australia
SOURCE: Journal of Polymer Science, Part A: Polymer Chemistry (2005), Volume Date 2006, 44(2), 857-864
CODEN: JPACEC; ISSN: 0887-624X
PUBLISHER: John Wiley & Sons, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The γ-initiated reversible addition-fragmentation chain transfer mediated free-radical graft copolymn. of styrene and m-isopropenyl-

α,α'-dimethylbenzyl isocyanate (TMI) from a polypropylene (PP) solid phase was performed with cumyl phenyldithioacetate (CPDA) as the chain-transfer agent. The initial CPDA concentration was 8 + 10-3 mol L-1. Polymns. were performed with a dose rate of 0.18 kGy h-1 at the ambient temperature Initial comonomer mixts. with 15, 30, and 50 mol % TMI were used. Depending on the amount of TMI in the initial comonomer mixture, the plot of the grafting ratio vs. the time showed two grafting regimes (for 15 and 50 mol % TMI) or one (for 30 mol % TMI). Scavenger lanterns with 15 and 50 mol % TMI featured two isocyanate loading regimes, the second with higher loading capacities. The scavenger lanterns with 30 mol % TMI showed a linear loading capacity over the full grafting ratio. A maximum loading capacity of 110 μmol per scavenger lantern was achieved with 50 mol % TMI at a grafting ratio of approx. 60 wt %.

REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 6 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:1211350 CAPLUS
DOCUMENT NUMBER: 144:108650
TITLE: Sequence-Defined Polypeptide-Polymer Conjugates Utilizing Reversible Addition Fragmentation Transfer Radical Polymerization
AUTHOR(S): ten Cate, Mattijs G. J.; Rettig, Hartmut; Bernhardt, Kaj; Boerner, Hans G.
CORPORATE SOURCE: Max Planck Institute of Colloids and Interfaces, MPI KGF Golm, Potsdam, 14424, Germany
SOURCE: Macromolecules (2005), 38(26), 10643-10649 CODEN: MAMOBX; ISSN: 0024-9297
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Straightforward solid-phase-supported synthesis routes were presented to obtain novel oligopeptide-based reversible addition fragmentation transfer (RAFT) agents. These approaches include the coupling of a functional RAFT agent to a resin-bound peptide and the functionality switch of an oligopeptide ATRP macroinitiator into an oligopeptide transfer agent. The solid-phase-supported methods allowed easy purification of the transfer agents, making difficult column purification steps unnecessary. Well-defined conjugates comprising sequence-defined peptides and synthetic polymers could be accessed by applying RAFT polymerization techniques in combination with the peptide macrotransfer agents. Polymerization reactions of Bu acrylate were performed in solution, yielding peptide-polymer conjugates with controllable mol. weight and low polydispersities of around 1.1. The peptide-polymer conjugates were characterized using 1H NMR spectroscopy and size exclusion chromatog. (SEC), while the incorporation of the oligopeptide into the synthetic polymer and the preservation of the chirality were shown by CD spectroscopy.
REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 7 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:621736 CAPLUS
DOCUMENT NUMBER: 143:267319
TITLE: Reversible Addition-Fragmentation Chain Transfer Polymerization Mediated by a Solid Supported Chain Transfer Agent
AUTHOR(S): Perrier, Sebastien; Takolpuckdee, Pittaya; Mars, Craig A.

CORPORATE SOURCE: Department of Colour and Polymer Chemistry, University of Leeds, Leeds, LS2 9JT, UK
SOURCE: Macromolecules (2005), 38(16), 6770-6774
CODEN: MAMOBX; ISSN: 0024-9297
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The use of a Merrifield resin and silica solid supported chain transfer agent (S-methoxycarbonylphenylmethyl dithiobenzoate) that is attached to a surface through its Z group is reported. Such CTA's offer the great advantage to allow separation between pure living polymeric chains, which are attached to the support, from non-living chains, and non-reacted monomers and other side products from the reaction, which remain free in solution The reversible addition-fragmentation chain transfer (RAFT) polymerization of Me acrylate using the supported CTA's is described.
REFERENCE COUNT: 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 8 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:230721 CAPLUS
DOCUMENT NUMBER: 141:38890
TITLE: Synthesis of terminally functionalized, (Co)polymers via reversible addition fragmentation chain transfer (RAFT) and subsequent immobilization to solid surfaces with potential biosensor applications
AUTHOR(S): Scales, Charles W.; Myrick, Leslie J.; Sumerlin, Brent S.; Lowe, Andrew B.; McCormick, Charles L.
CORPORATE SOURCE: Department of Polymer Science, The University of Southern Mississippi, Hattiesburg, MS, 39406, USA
SOURCE: PMSE Preprints (2004), 90, 36-37
CODEN: PPMRA9; ISSN: 1550-6703
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal; (computer optical disk)
LANGUAGE: English
AB Series of nonionic, cationic, anionic, and zwitterionic water-soluble, homo- and block (co)polymers have been synthesized as stimuli-responsive linkers to solid supports with potential applications in such areas as bio-sensing and diagnostic technologies. These polymers were prepared via the controlled radical polymerization methodol. known as reversible addition-fragmentation chain transfer (RAFT) polymerization Using this technique, polymers of about 38000 g·mol-1 with PDI≤ 1.10 were successfully prepared By virtue of the polymerization mechanism, the afforded polymers possess α,ω- functionality which enables facile grafting of the (co)polymers to either planar gold surfaces or spherical gold colloids. This is achieved via reduction of the dithioester moieties present on the polymer chain ends and subsequent chemisorption to the gold. The polymers were characterized using 1H and 13C NMR spectroscopy, aqueous size exclusion chromatog. (ASEC), fluorescence spectroscopy, attenuated total reflectance Fourier transform IR spectroscopy (ATR FT-IR), contact angle measurements, and atomic force microscopy (AFM) both on and off of the substrate.
REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 9 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:228178 CAPLUS
TITLE: Synthesis of terminally functionalized, (Co)polymers via reversible addition

fragmentation chain transfer (RAFT) and subsequent immobilization to solid surfaces with potential biosensor applications

AUTHOR(S): Scales, Charles W.; Myrick, Leslie J.; Summerlin, Brent; Lowe, Andrew B.; McCormick, Charles L.

CORPORATE SOURCE: Department of Polymer Science, University of Southern Mississippi, Hattiesburg, MS, 39406, USA

SOURCE: Abstracts of Papers, 227th ACS National Meeting, Anaheim, CA, United States, March 28-April 1, 2004 (2004), PMSE-024. American Chemical Society: Washington, D. C.
CODEN: 69FGKM

DOCUMENT TYPE: Conference; Meeting Abstract

LANGUAGE: English

AB Series of nonionic, cationic, anionic, and zwitterionic water-soluble, homo- and block (co)polymers have been synthesized as stimuli-responsive linkers to solid supports with potential applications in such areas as bio-sensing and diagnostic technologies. These polymers were prepared via the controlled radical polymerization methodol. known as Reversible Addition-Fragmentation Chain Transfer (RAFT) polymerization Using this technique, polymers of .apprch.38000 g•mol-1 with PDI=< 1.10 were successfully prepared By virtue of the polymerization mechanism, the afforded polymers possess α,ω - functionality which enables facile grafting of the (co)polymers to either planar gold surfaces or spherical gold colloids. This is achieved via reduction of the dithioester moieties present on the polymer chain ends and subsequent chemisorption to the gold. The polymers have been characterized using 1H and 13C NMR spectroscopy, aqueous size exclusion chromatog. (ASEC), fluorescence spectroscopy, attenuated total reflectance Fourier transform IR spectroscopy (ATR FT-IR), contact angle measurements, and atomic force microscopy (AFM) both on and off of the substrate. E-mail: charles.mccormick@usm.edu.

L2 ANSWER 10 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2002:629297 CAPLUS

DOCUMENT NUMBER: 137:338372

TITLE: Facile synthesis of comb, star, and graft polymers via reversible addition-fragmentation chain transfer (RAFT) polymerization

AUTHOR(S): Quinn, John F.; Chaplin, Rodney P.; Davis, Thomas P.

CORPORATE SOURCE: Centre for Advanced Macromolecular Design, School of Chemical Engineering and Industrial Chemistry, University of New South Wales, Sydney, 2052, Australia

SOURCE: Journal of Polymer Science, Part A: Polymer Chemistry (2002), 40(17), 2956-2966
CODEN: JPACEC; ISSN: 0887-624X

PUBLISHER: John Wiley & Sons, Inc.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Reversible addition-fragmentation chain transfer (RAFT) polymerization has been shown to be a facile means of synthesizing comb, star, and graft polymers of styrene. The precursors required for these reactions were synthesized readily from RAFT-prepared poly(vinylbenzyl chloride) and poly(styrene-co-vinylbenzyl chloride), which gave intrinsically well-defined star and comb precursors. Substitution of the chlorine atom in the vinylbenzyl chloride moiety with a dithiobenzoate group proceeded readily, with a minor detriment to the mol. weight distribution. The kinetics of the reaction were consistent with a living polymerization mechanism,

except that for highly crowded systems, there were deviations from linearity early in the reaction due to steric hindrance and late in the reaction due to chain entanglement and autoacceleration. A crosslinked polymer-supported RAFT agent was also prepared, and this was used in the preparation of graft polymers with pendant polystyrene chains.

REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMA